

ON THE OCCURRENCE OF *ARION FASCIATUS*, NILS. IN AMERICA.

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Whilst in Washington, D. C., a friend of mine collected for me a few slugs from a garden, amongst which I was surprised to find a single specimen of *Arion fasciatus* Nils. The specimen measured (in alcohol) 26 mill., and is of a brown color with darker lateral bands which are continued to the anterior border of the mantle; the foot-sole is almost white and there is a faint keel; it approaches very closely the var. *neustriacus* Mabilie. Adult keeled forms of this variety are very uncommon in the British Isles, and from this fact I assumed that this individual had probably been introduced from Europe. My friend has since ascertained that such is very likely the case, as he has learned that a previous owner of the garden was in the habit of importing plants which were usually packed in moss.

A. fasciatus is easily distinguished from *A. hortensis* Fér., by its white foot-sole, and from the majority of the species of this genus by the peculiar form of the receptaculum seminis, which instead of being pyriform or oval in shape, is elongated, terminating in a long pointed apex.

PISIDIA NEW TO OUR COUNTRY, AND NEW SPECIES.

BY DR. V. STERKI.

It has been considered almost an axiom that the American *Pisidia* lie eo ipso distinct from those of the eastern continent. But last year, the efforts of several conchologists have brought to light a number of species which are identical with European forms.

1. In Lake Ontario, on the New York shore, by Mr. Frank C. Baker; in the Hamilton Bay, Ontario, by Mr. James Johnston, a *Pisidium* has been collected which is absolutely identical with a form from England received as *amicum* Müll., and, as it seems, not distinct from one of France, under the same name. Mr. Clessin, to whom a few specimens were submitted, thinks it not exactly *amicum*. Considering the great variability of most *Pisidia*, these forms must be studied further.

2. *Pis. henslowianum* Shep. has also been collected in Hamilton Bay, Lake Ontario, by Mr. James Johnston; a number of good specimens.

3. *Pis. milium* Held, conforming with European specimens, have been collected in Straits Lake, Michigan, by Mr. Bryant Walker, and in Dallas Lake, Stearns County, Minn., by Mr. H. E. Sargent. Among a number of fossils from a marl bed in Tuscaloosa County, Mich., also collected by Mr. Walker, there was one valve of the same species.

4. In Aroostook County, Maine, Olof O. Nylander has found a few specimens of a *Pisidium* identical with one from England named *milium* Held, which, however, Mr. Clessin says, is not that species. It is of somewhat the same shape and color, but larger and the beaks are more prominent.

The question whether these *Pisidia* be native or introduced is answered, at least for *milium*, by the fossil found. As to No. 4, an importation is rather improbable, from its habitat. For Nos. 1 and 2 the possibility of a colonization cannot be denied, just as *Bithynia tentaculata* has immigrated from Europe, and, on the other hand, *Calyculina transversa* Say seems to have been transported into England. Further researches are very desirable, and also fossils should be secured wherever such may be obtainable.

5. *Pis. contortum* Pr. This *Pisidium* has been described, in 1852, as a fossil sp. from Massachusetts, and has lately been collected from marl beds in Maine by Mr. Nylander, and in Michigan, by Mr. Walker. Last year Mr. Nylander succeeded in finding a few recent, living specimens, in Aroostook Co., Me. The shell is transparent, of a deep wine or amber color, the surface highly polished.

6. *Pis. medianum*, n. sp. Mussel of rather small size, elliptical in outline, much inflated, often of somewhat irregular growth; superior and inferior margins moderately curved, posterior well rounded, or with a slight angle above, anterior rounded or slightly truncated obliquely; beaks rather in the middle, slightly directed toward the posterior, rather high, prominent over the hinge margin; scutum and scutellum very slightly marked; surface with very fine, crowded striae, somewhat shining, light horn to yellowish or straw colored; shell thin, nacre colorless, muscle insertions barely perceptible; hinge fine, plate narrow; cardinal teeth lamellar, slightly curved, the right one in its posterior part somewhat thicker, simple or with a fine, longitudinal groove; lateral teeth pointed, the outer ones of the right valve comparatively large; ligament fine, long. 2.5 to 3.5, alt. 2.0 to 2.8, diam. 1.7 to 2.3 mill.

Habitat: Michigan, all over the state; lakes in Wisconsin.

Var. minutum, n. Smaller, less elongated, of more regular shape, almost globular when fully grown, usually of deeper color, surface with very fine striation, polished, but almost always covered with a greenish or blackish coating. Aroostook County, Me., very common in some waters, collected by Mr. Olof O. Nylander; Mohawk, N. Y., in the collection of the late Dr. James Lewis; also some forms from Michigan rather range with the variety, *e. g.*, from Hess lake, collected by Mr. L. H. Streng. This *Pisidium* has been known for years. But owing to the fact that *Pis. rotundatum* Pr., of almost the same size, was not exactly known, it was thought better to defer publication. It is one of the best characterized of our species, not nearly related to or resembling any other *Pisidium*, except *P. ferrugineum* Pr.,¹ which is at once distinguished by the strong ridges on the beaks. *Pis. medianum* is mainly characterized by its beaks being almost exactly in the middle of the mussel, its anterior part being sometimes even smaller than the posterior. Hence its name.

Specimens have been collected in deeper water, 24 meters, of Lake Michigan, off New York point, and also from the stomachs of whitefish, sent by Mr. Bryant Walker. Among a lot from Blue Lake, Michigan, collected by Dr. R. J. Kirkland, there were many specimens with that peculiar, perpendicular scar so often seen in *Pisidia* and *Sphaeria*, but unusually deep.

7. *Pis. kirklandi*, n. sp. Mussel of medium size, somewhat oblique, well inflated when mature, very little so in the young, high, rather oval in outline; superior margin strongly, inferior moderately curved, posterior slightly truncated, passing into the superior by an obtuse, rounded angle, antero-superior slightly curved or almost straight, sloping toward the rounded anterior end; scutum well, scutellum slightly marked; beaks somewhat posterior, high and prominent in the mature, low in the young mussel, with stout ridges, highest at the posterior and slanting towards the anterior ends, slightly sinuous on the outer sides; surface with very coarse, rather regular striation, dull, rugulose, straw colored in the young, light grayish in the adult with a light zone along the margin; shell rather thick, naere almost glossy, appearing bluish in old specimens, muscle insertions distinct; hinge stout, hinge plate broad; cardinal teeth of moderate size, rather high up on the plate, the right one angular, its posterior part thick-

¹That species has, so far, been seen only from New England and New York.

ened, with or without a groove; below it is a deep excavation; left cardinal teeth: the anterior rather stout but its edge acute, the posterior oblique, slightly curved; lateral teeth stout, the outer ones of the right valve quite small; ligament strong.

Long. 4, alt. 3.8, diam. 2.7 mill.

Habitat: Michigan, Illinois, Ohio.

In a lot from the Grand River, at Grand Rapids, Mich., collected by Dr. Reynold J. Kirkland, in whose honor the species is named, there were over two hundred specimens, most of them young and half grown, in company with *Pis. compressum* Pr. (thousands of different forms), *fallax*, *eruciatum*, *punctatum*, and a number of other species. A few from Berry Lake, Chicago, were sent by the Chicago Academy of Science (Mr. F. C. Baker), and one single valve was found in the Anglaize River, tributary to the Maumee River, Lake Erie drainage, by the writer, in 1893, in company with *Pis. compressum* Pr.

Pis. kirklandi is related to *P. compressum* Pr., and more so to *fallax* St. From the former, it is at once distinguished by the more rounded outlines of the adult specimens; the young are higher in the anterior part, and the mussel is nearly square, while the young of *compressum* are more triangular; and in the latter, the beaks are higher, the (young) mussel is of comparatively larger diameter. From *P. fallax* it differs by its larger size, the coarse striation, the shape of the ridges and the grayish color.

Pis. septentrionale Prime.¹ The name being pre-occupied for a Lapland species, *P. fallax* var. *septentrionale* St. must be changed, and *v. boreale* is herewith proposed.

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GENERAL NOTES.

COCHLICOPA LUBRICA in Alaska. In the article describing *Hyalina pellucida* and *H. arctica*, Science Record, II, p. 172, 1884, Mr. Lehnert records finding a specimen of the above species in the same dried-plant packing material the *Hyalinæ* were found in, from Point Barrow, Alaska.

WEST COAST OYSTER HERMAPHRODITIC.—F. L. Washburn, of the University of Oregon, has lately confirmed Prof. Schiedt's discovery that male and female elements co-exist in the West American oyster. There seems to be no evidence of protandry, mature eggs and spermatozoa existing at the same time. The full account is in *Science* for March 31.

¹ Cat. Corbiculadæ, 1895, p. 61, "Undescribed."